

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Currently Amended) An apparatus comprising:
an adaptive bit loading block to receive channel state information for a plurality of subcarriers and to select a modulation scheme and a puncturing pattern for each of the plurality of subcarriers or for each of a plurality of subbands based on the channel state information, the adaptive bit loading block to select a first puncturing pattern having a first number of output coded bits for a first subcarrier or subband of the plurality of subcarriers or subbands, the adaptive bit loading block to select a second puncturing pattern having a second number of output coded bits for a second subcarrier or subband of the plurality of subcarriers or subbands, the first number of output coded bits is different than the second number of output coded bits;
a puncturing block to puncture a coded bit stream for each of a the plurality of subcarriers or subbands in accordance with the selected puncturing pattern;
a mapping block to map a coded and punctured bit stream output from the puncturing block to one or more subcarrier symbols for each of the plurality of subcarriers or subbands, the first subcarrier or subband and the second subcarrier or subband are mapped to a set of the one or more subcarrier symbols.
2. (Original) The apparatus of claim 1 and further comprising an encoder coupled to the puncturing block to produce the encoded bit stream.
3. (Original) The apparatus of claim 2 wherein the encoder comprises a convolutional encoder.

4. (Original) The apparatus of claim 1 wherein each of the subbands comprises a plurality of subcarriers.
5. (Original) The apparatus of claim 1 wherein the mapping block comprises a mapping block to map a coded and punctured bit stream output from the puncturing block to one or more OFDM subcarrier symbols for each of a plurality of OFDM subcarriers or OFDM subcarrier subbands, where the OFDM subcarrier subbands comprises a plurality of OFDM subcarriers.
6. (Original) The apparatus of claim 1 and further comprising an OFDM modulator to modulate a selected subcarrier symbol onto a OFDM subcarrier for each of a plurality of OFDM subcarriers.
7. (Currently Amended) The apparatus of claim 1 wherein the puncturing pattern ~~and/or~~ and modulation scheme for a subcarrier are selected such that the number of bits in the subcarrier symbol or subband are the same or a multiple of a number of output coded bits in a puncturing pattern.
8. (Currently Amended) The apparatus of claim 1 wherein ~~a~~ the puncturing pattern ~~and/or~~ and modulation scheme are selected such that one or more sets of output coded bits in a puncturing pattern may map onto one subcarrier or one subband.
9. (Currently Amended) The apparatus of claim 1 wherein ~~a~~ the puncturing pattern ~~and/or~~ and modulation scheme are selected such that one or more sets of output coded bits in ~~a~~ the puncturing pattern may map onto one subcarrier if adaptive bit loading per subcarrier is performed, or map onto one subband if adaptive bit loading per subband is performed.
10. (Currently Amended) An apparatus comprising an adaptive bit loading block to select a modulation scheme and a puncturing pattern for an OFDM subcarrier or an OFDM subcarrier subband based on subcarrier channel state information such that a first

number of output coded bits in the puncturing pattern for the OFDM subcarrier or OFDM subcarrier subband is different than a second number of output coded bits in a second puncturing pattern for a second OFDM subcarrier or OFDM subcarrier subband, the OFDM subcarrier or OFDM subcarrier subband and the second OFDM subcarrier or OFDM subcarrier subband are mapped to a set of one or more subcarrier symbols.

11. (Original) The apparatus of claim 10 wherein the modulation scheme and the puncturing pattern are selected such that a number of bits in an OFDM subcarrier symbol or in an OFDM subcarrier subband to be the same or a multiple of the number of output coded bits in the puncturing pattern.

12. (Currently Amended) An apparatus comprising an adaptive bit loading block to select a modulation scheme and a puncturing pattern for each of a plurality of OFDM subcarriers or OFDM subcarrier subbands based on subcarrier channel state information, ~~a~~ at least one of said subcarrier subband subbands comprising a plurality of OFDM subcarriers, the adaptive bit loading block to select a first puncturing pattern having a first number of output coded bits for a first OFDM subcarrier or OFDM subcarrier subband of the plurality of OFDM subcarriers or subbands, the adaptive bit loading block to select a second puncturing pattern having a second number of output coded bits for a second OFDM subcarrier or OFDM subcarrier subband of the plurality of OFDM subcarriers or subbands, the first number of output coded bits is different than the second number of output coded bits, the first OFDM subcarrier or OFDM subcarrier subband and the second OFDM subcarrier or OFDM subcarrier subband are mapped to a set of OFDM subcarrier symbols.

13. (Currently Amended) The apparatus of claim 12 and further comprising a puncturing block to puncture a coded bit stream for each of ~~a~~ the plurality of the subcarrier subbands according to the puncturing pattern selected for the subcarrier subband.

14. (Currently Amended) The apparatus of claim 13 and further comprising a mapping block to map coded and punctured bits into the OFDM subcarrier symbols according to the selected modulation scheme for each of the subcarrier subbands.
15. (Currently Amended) A method comprising:
receiving channel state information for each of a plurality of subcarriers; ~~and~~
selecting a modulation scheme and a puncturing pattern for each of a plurality of subcarriers or subcarrier subbands based on the subcarrier channel state information;
selecting a first puncturing pattern having a first number of output coded bits for a first subcarrier or subband of the plurality of subcarriers or subbands;
selecting a second puncturing pattern having a second number of output coded bits for a second subcarrier or subband of the plurality of subcarriers or subbands, the first number of output coded bits is different than the second number of output coded bits; and
mapping the first subcarrier or subband and the second subcarrier or subband to subcarrier symbols.
16. (Currently Amended) The method of claim 15 and further comprising:
coding data bits to produce a coded bit stream;
puncturing the coded bit stream for each of a plurality of subcarriers according to the selected puncturing pattern for each subcarrier; and
mapping bits from the coded and punctured bit stream to the subcarrier symbols according to the selected modulation schemes for each subcarrier or subband.
17. (Currently Amended) The method of claim 15 wherein the selecting comprises selecting ~~a~~ the modulation scheme and ~~a~~ the puncturing pattern for each of ~~a~~ the plurality of subcarriers or subcarrier subbands such that a number of bits in an OFDM subcarrier symbol or OFDM subcarrier subband is the same or a multiple of the number of output coded bits in ~~a~~ the puncturing pattern.
18. (Currently Amended) A method comprising:

receiving channel state information for each of a plurality of subcarriers; ~~and~~
selecting a modulation scheme and a puncturing pattern for each of a plurality of
subcarrier subbands based on the subcarrier channel state information, each subband
comprising a plurality of OFDM subcarriers;

selecting a first puncturing pattern having a first number of output coded bits for a
first subband of the plurality of subbands;

selecting a second puncturing pattern having a second number of output coded
bits for a second subband of the plurality of subbands, the first number of output coded
bits is different than the second number of output coded bits; and

mapping the first subband and the second subband to a set of subcarrier symbols.